

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Khalid Sayood et al.	Art Unit	: 1631
Serial No.	: 10/561,889	Examiner	: Russell Scott Negin
Filed	: September 6, 2006	Conf. No.	: 5917
Title	: SYSTEM AND METHOD FOR SEQUENCE DISTANCE MEASURE FOR PHYLOGENETIC TREE CONSTRUCTION		

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO RESTRICTION REQUIREMENT MAILED OCTOBER 9, 2009

In response to the Restriction Requirement mailed October 9, 2009, Applicants elect Group II, claims 22 and 23. Applicants respectfully traverse the requirement for restriction.

The Examiner asserted that the restriction of the claims under PCT Rule 13 is proper because, according to the Examiner, Groups I and II do not relate to a single general inventive concept under PC Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical feature. The Examiner stated that the claimed methods are not a contribution over the prior art because they are suggested by Felsenstein (1981, *J. Mol. Evol.*, 17:368-76). Therefore, the Examiner stated that lack of unity is present because determining subsets of nucleotides within nucleic acid sequences is not a "special technical feature" as defined by PCT Rule 13.2.

Contrary to the Examiner's assertions, the methods disclosed by Felsenstein and the presently claimed methods are quite different. For example, Felsenstein's method uses the maximal likelihood, which requires multiple alignments of sequences and also relies upon assumptions regarding an evolutionary model. Felsenstein evaluates the fitness of different topologies to develop a phylogenetic tree that can best explain the observed sequences under the evolutionary assumption. Applicants respectfully refer the Examiner to paragraphs [0002] and [0003] in Applicants' published application (US 2007/0225918), which describe the limitations of the methods described by Felsenstein (reference [16] in Applicants' specification).

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On the other hand, the presently claimed methods do not require multiple alignments and do not use approximations and assumptions in calculating the distance between sequences. The presently claimed methods create a dictionary of words using sequences (see, for example, paragraph [0052] of Applicants' published application). Applicants note that claims 1-21 are directed toward reading words to generate a dictionary, while claims 22 and 23 are directed toward determining the distance between two sequences using such a dictionary. Therefore, the claims of Group I clearly share a technical relationship with the claims of Group II, which is not taught or suggested by Felsenstein. Accordingly, the Unity of Invention requirement under PCT Rule 13.1 and 13.2 is fulfilled, and Applicants respectfully request that claims 1-23 be examined together.

Please apply the \$245 fee for the enclosed Petition for Extension of Time and any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

/January 11, 2010/

/M. Angela Parsons/

Date: _____

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